REMARKS/ARGUMENTS

The Examiner stated that Claims 9-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 9 has been rewritten in independent form including all of the limitations of the base claim and any intervening claims. Since Claims 10-12 are dependent on rewritten Claim 9, Claims 9-12 are in a form for allowance.

Examiner has rejected Claims 1-8 under 35 U.S.C. § 102 (e) as being anticipated by U.S. Patent No. 6,438,420 B1 to Thompson. Examiner states as follows:

> Regarding to claims 1-8, Thompson discloses a power supply with integral control circuit comprising a low voltage section 30 for providing a control signal; a high voltage section 34 having an output for powering a load; and a bridge section 200 capacitively coupling the low voltage section to the high voltage section, the bridge section adapted to operate the high voltage section in response to a signal from the low voltage section (col. 2, lines 28-35, col. 3, lines 25-33, and col. 8, lines 50-53).

Applicant respectfully traverses the Examiner's reasoning. Applicant notes that the above quoted references do not refer to using a capacitor as a mean of both isolating the high switching voltage circuit from the low voltage control circuit while being used to switch the high voltage side. In fact the only high voltage capacitor cited in Thompson are those used to store the high voltage itself, which is not applicable in the present invention. Basically Thompson uses a capacitor to store a high voltage used for pacing (or defibrillation) while the present invention discloses the use a capacitor for high voltage isolation. Thompson relies on transformers (effectively magneto-resistors) to obtain high voltage isolation. More specifically, the prior art described in column 2, lines 25-33 of Thompson provides:

> The discharge of the high voltage capacitors is typically effected by connecting the charged capacitors to the electrodes in discharge circuit paths through high voltage,

> high current conducting, Insulated Gate Transistors (IGTs) or metal oxide semiconductor field effect transistors (MOSFETs or power FETs), either employed alone or in electrical series with high voltage thyristers or "triacs".

Further, column 3, lines 25-33 of Thompson provides:

> Upon reaching full charge, the microprocessor provides first and second, biphasic pulse width defining, control signals in succession to separate inputs of each low side drive circuit which either provide a trigger signal to a high side drive circuit or a gate control signal to a low side IGT so that only one branch of the bridge circuit is enabled for conduction and discharge of the high voltage capacitors through the patient's heart during each phase.

As can be seen, no reference is made in the cited passages about using a capacitor to control the switching of the high side switches, such as insulated gate transistors (IGTs) or metal oxide semiconductor field effect transistors. However, Thompson expressly cites the use of optical isolation devices (opto-isolators 200) to control the high side high voltage switches. For example, Thompson states in column 2, lines 48-52 as follows:

> In order to electrically isolate the high voltage discharge circuits from the low voltage control circuits and microprocessor based control system, isolation transformers or optical isolators (opto-couplers) or capacitive coupling and common mode rejection circuits have been proposed.

And in column 2, lines 58-61, Thompson provides:

> The optical isolators and driver circuits employed in the '427 patent do not suffer from these drawbacks but still take sizable hybrid circuit volume, are costly, consume battery power, and have potential catastrophic failure modes.

And in column 8, lines 50-53, Thompson provides:

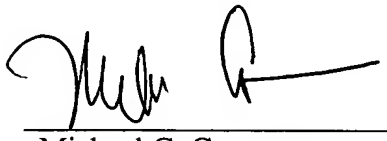
> Isolation between low voltage control circuitry 30 and high voltage switching circuitry 34 is provided by opto-isolators 200 (LED 212/photo transistor 214), 1 shown in detail.

Thompson discredits the use of opto-isolation devices as having "sizable hybrid circuit volume, are costly, consume battery power, and have potential catastrophic failure modes" in column 8, lines 50-53. Thompson's passing mention in column 2, line 52 of capacitively coupling falls well short of a description of the present invention as required by 35 U.S.C. § 102. The present application provides details on how such isolation is possible and to enable it. Such and enabling description is unavailable from either Thompson or any of the reference cited by Thompson.

Applicant also brings to the attention of the Examiner U.S. Patent No. 5,178,140 to Ibrahim ("Ibrahim") (enclosed). Ibrahim describes a means of using a capacitor to drive the high side switch of a integrated defibrillator. However the rectifying circuit described in Ibrahim is very complex, using 13 MOSFETs, 1 diode, 5 resistors, and 4 capacitors, and requires an external high voltage 1 micro-Amp current source (see Figure 14 of Ibrahim). Two of the capacitors in the Ibrahim disclosure are high voltage capacitors. In comparison, the circuit of the present invention is comprised of only 1 MOSFET, 3 diodes, 1 resistor and 2 capacitors, only one of which is high voltage. Clearly the circuit of the present invention has significant advantages over the circuit of Ibrahim.

Applicant respectfully requests that a timely Notice of Allowance for Claims 1-12 be issued in this case.

Respectfully Submitted,



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